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Exchange Plaza, Bandra Kurla Complex,
Mumbai-400051
Symbol: TCS

BSE Limited
P. J. Towers, Dalal Street,
Mumbai-400001
Scrp Code No. 532540

Dear Sirs,

We are sending herewith copy of the Press Release titled “**TCS & IIT-Bombay to Build India’s First Quantum Diamond Microchip Imager**” which will be disseminated shortly.

The Press release is self-explanatory.

Thanking you,

Yours faithfully,
For Tata Consultancy Services Limited

Pradeep Manohar Gaitonde
Company Secretary

TATA CONSULTANCY SERVICES

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TCS & IIT-Bombay to Build India's First Quantum Diamond Microchip Imager

The Quantum Diamond Microchip Imager, an advanced sensing tool for semiconductor chip imaging, will help reduce chances of chip failures and improve efficiency of electronic devices

Collaboration between TCS & IIT-Bombay to develop a quantum imaging platform for the non-destructive examination of chips is the first such initiative in India

Project aligned with the Government of India's National Quantum Mission – an initiative to position the nation as a global quantum technology leader

MUMBAI, MAY 28, 2024: [Tata Consultancy Services](#) (TCS) (BSE: 532540, NSE: TCS), a global leader in IT services, consulting, and business solutions, has entered a strategic partnership with the Indian Institute of Technology, Bombay (IIT-Bombay), to develop India's first Quantum Diamond Microchip Imager. This advanced sensing tool will hold the potential to unlock new levels of precision in the examination of semiconductor chips, reduce chip failures and improve the energy efficiency of electronic devices.

Over the next two years, experts from TCS will work with Dr. Kasturi Saha, Associate Professor in the Department of Electrical Engineering of IIT-Bombay to develop the quantum imaging platform in the PQuest Lab. This platform will enable better quality control of semiconductor chips, thereby improving product reliability, safety, and energy efficiency of electrical devices. Semiconductor chips are an essential component of all modern electronic devices, making them smart and efficient. With the ability to process data and complete tasks, these chips act as the brain of devices across industries such as communications, computing, healthcare, military systems, transportation, clean energy, and more.

Dr. Kasturi Saha, Associate Professor in the Department of Electrical Engineering, IIT-Bombay, said, *"PQuest group at IIT Bombay is excited to collaborate with TCS on developing a quantum imaging platform for the non-destructive examination of chips, leveraging our extensive expertise in quantum sensing to drive innovation. By working together, we aim to transform various sectors, including electronics and healthcare, and propel India forward through groundbreaking technologies and products aligned with National Quantum Mission's Quantum Sensing and Metrology vertical."*

Dr Harrick Vin, Chief Technology Officer, TCS, said, *"The Second Quantum Revolution is progressing at an unprecedented speed, making it imperative to pool our resources and expertise to build cutting-edge capabilities in sensing, computing, and communication technologies. Our collaboration with IIT Bombay is perfectly aligned with the National Quantum Mission's Quantum Sensing and Metrology vertical. We firmly believe this initiative will have a transformative impact on various industries and society, with applications ranging from electronics to healthcare, and beyond. By working together, we can drive innovation and create a brighter future for all."*

The collaboration between TCS and IIT-Bombay is aligned with the National Quantum Mission – an initiative by the government of India to position the nation as a global quantum technology leader. An indigenous Quantum Diamond Microchip Imager that integrates quantum diamond microscopy with AI/ML-powered software imaging will help India leap ahead in the Quantum Revolution.

Prof Shireesh Kedare, Director, IIT Bombay, said, *"IIT Bombay is happy to announce this collaborative initiative with TCS to develop a quantum imaging platform for the non-destructive examination of chips. IIT Bombay has a wide and deep pool of expertise in different critical domains, and we are keen to collaborate*

with industry to translate the ideas, innovations and research into the technologies and products through such collaborations as well as startups that will take India ahead."

As semiconductors continue to shrink in size, traditional sensing methods lack the precision and capabilities to detect anomalies in the chips. The Quantum Diamond Microchip Imager can image magnetic fields, enabling a non-invasive and non-destructive mapping of semiconductor chips, much like an MRI at a hospital. It uses the defects in a diamond's structure, known as Nitrogen-Vacancy (NV) centers, together with the other hardware and software for detecting and characterizing anomalies in semiconductor chips. These diagnostic capabilities will have significant implications for failure analysis, device development, and various optimization processes. With its advanced capabilities to identify chip defects such as current leakages and enable visualization of three-dimensional charge flow in multi-layer chips, Quantum Diamond Microchip Imager is a leap forward in semiconductor imaging. It will have wide applications in microelectronics, biological, and geological imaging, and fine-scale imaging of magnetic fields, among others.

This project builds on TCS and IIT-B's dynamic partnership since the 1990s, spanning joint research projects, collaborative education programs, internships, faculty development programs, and more. Notably, IIT-B was the first institute to be signed as an academic partner for TCS' Co-Innovation Network (COIN), a platform driving industry-academia collaboration for pioneering solutions.

About Tata Consultancy Services (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that has been partnering with many of the world's largest businesses in their transformation journeys for over 56 years. Its consulting-led, cognitive powered, portfolio of business, technology and engineering services and solutions is delivered through its unique Location Independent Agile™ delivery model, recognized as a benchmark of excellence in software development.

A part of the Tata group, India's largest multinational business group, TCS has over 601,000 of the world's best-trained consultants in 55 countries. The company generated consolidated revenues of US \$29 billion in the fiscal year ended March 31, 2024, and is listed on the BSE and the NSE in India. TCS' proactive stance on climate change and award-winning work with communities across the world have earned it a place in leading sustainability indices such as the MSCI Global Sustainability Index and the FTSE4Good Emerging Index. For more information, visit www.tcs.com

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